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Timothy Perisho
info@ubiquitypress.com

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Abstract

In this paper, I argue that purely Coherentist justifications (or refutations) of theories must rely upon a 'theory-neutral' set of sense data with which we are immediately acquainted. First, I explain the function of Russell's theory of Definite Description and his theory of Acquaintance in his Coherentist epistemology. I take my counter-examples from the natural sciences and ultimately play off the fact that our brains 'over-correct' colors we see according to their color contexts in order to question the very idea of an 'I,' 'this,' and 'now,' which Russell uses to define acquaintance (as well as what I call a 'theory-neutral' set of sense data). The argument is that our data and theories are mutually dependent, which undermines the project of comparing theories, since distinct ultimate theories cannot have any common ground. Note: Minor typographical corrections made and new version of article uploaded 8.29.2011.

Russell's Coherentism: Theoretically Impossible

Timothy Perisho
Seattle Pacific University

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Abstract

In this paper, I argue that purely Coherentist justifications (or refutations) of theories must rely upon a 'theory-neutral' set of sense data with which we are immediately acquainted. First, I explain the function of Russell's theory of Definite Description and his theory of Acquaintance in his Coherentist epistemology. I take my counter-examples from the natural sciences and ultimately play off the fact that our brains 'over-correct' colors we see according to their color contexts in order to question the very idea of an 'I,' 'this,' and 'now,' which Russell uses to define acquaintance (as well as what I call a 'theory-neutral' set of sense data). The argument is that our data and theories are mutually dependent, which undermines the project of comparing theories, since distinct ultimate theories cannot have any common ground.

Russell believed that an analysis of the way that words denote entities was "of very great importance, not only in mathematics, but also in the theory of knowledge."¹ His preferred theory of knowledge was Coherentism, which justifies theories based upon their internal logical consistency and their consistency with experience. This is why it was so important to him that words refer to or "denote" theoretical and familiar entities very precisely. They do this by definite descriptions and names. Russell's famous theory of definite descriptions explained how we can refer to theoretical entities, such as atoms and magnetic fields, which we have not experienced, by defining them in terms of things with which we are acquainted. His definite descriptions enable us to meaningfully discuss things even if they do not exist, which gives us the power to compare theories based upon their logical implications and to select the most parsimonious. Unfortunately, however, our words cannot precisely denote even those things with which we are most acquainted without some prior theory about how to interpret our experiences.

In order to compare theories in terms of their consistency with the data, a Coherentist depends upon a 'theory-neutral' or objective set of data. Assuming that two internally

¹ Russell, Bertrand. "On Denoting." Marsh, Robert C, ed. *Logic and Knowledge*. London: George Allen & Unwin, 1956. p. 39

consistent theories are under consideration (i.e. two theories whose axioms do not imply any contradictions), then in order to determine which is the better theory, a Coherentist will look at each theory's consistency with the facts, or the commonly accepted data. If any datum contradicts either of the theories, then either that theory or the datum is faulty. A Coherentist must rely upon her data or else she may reject a true theory. However, if the 'meaning' of the data changes according to the theory one uses to interpret it, then it will not help the Coherentist decide between theories. Data which is reliably true and has a consistent meaning regardless of the theory under consideration I will call 'theory-neutral' and 'the ultimate sense data.' Therefore, a Coherentist must have a set of reliable, entirely theory-neutral data upon which to compare theories.

Realistically, if the scientific community considered all of its data in adjudicating every new theory, it would be paralyzed. Instead, scientists rely upon the truth of accepted lower-level theories in order to compare the most recent higher-level theories. For example, physicists routinely depend upon Newton's theory of gravity (and Einstein's Theory of Special Relativity) in order to calculate an object's mass from its weight as they investigate ever-smaller particles of matter. Therefore, our concept of mass is based upon our concept of force. Although we usually have misconceptions in our common sense understanding of force, our intuitive measurement of force is precise enough to make our precise measurements plausible. For example, I can tell if a bucket has something in it because it exerts more force on my arm and I could compare this to elongation of a spring holding the same bucket. However, it is crucial to note that the mathematical interpretation of force based upon the spring claims more precision than I could ever verify with my own experience. In other words it relies upon a theory of measuring force. Ultimately, the existence and measurement of something completely theoretical, such as mass, depends upon the existence of something more intuitive such as force, but also several theories about their relationship as well as their measurement in particular cases.

Similarly, the theoretical and mathematical model of temperature seems consistent with the relative temperatures that we feel everyday and that our language denotes with the terms, *hot*, *cool*, *warmer* and *cooler*. The epistemological problem is we base the theories of heat exchange, thermodynamics and the behavior of various materials under extreme temperatures upon a mathematical model for measuring temperature in common experience, while in other cases, we base the measurement of temperature upon these more sophisticated theories. This means that the mathematical (and logical) precision of the data used in higher-level theories depends upon the accuracy of lower-levels theories of measurement.

Russell had confidence in our knowledge of at least some theoretical entities, but as I hope to show, this reasoning is fundamentally circular and undermines Coherentism.

Specifically, he claims that we can 'know' the *existence* of an entity outside our acquaintance via descriptions that are based solely upon the objects of our acquaintance.² Essentially, his argument is that if we are acquainted with 'Jim' and know that every man has a father, then we know 'Jim's' father exists. Unfortunately, the existence of Jim's father cannot be used as a 'theory-neutral' datum since it depends upon the theory that every man has a father. This is equivalent to believing that everything that has weight has a mass. The theoretical constructions of Jim's father and the mass of an object are both commonly accepted, but these are assumptions that could lead us to reject true theories, which means that they cannot be purely Coherentist judgments.

It is still theoretically possible to make purely Coherentist judgments so long as our theories are logically connected to our ultimate sense data. Since our higher-level theories are based upon entities assumed by lower-level theories (our theories of objective and precise measurement), in order to logically connect them, we would need to know the logical implications of the lower-level theories being false or their entities non-existent. Throughout the rest of this paper, I will (1) explain how definite descriptions fit into the Coherentist project; then, I will (2) explain how Russell's theory of definite description allows us to transform propositions that depend upon the existence of theoretical entities into propositions that have logical implications (have meaning) regardless of whether the entities exist; then, I will (3) explain how Russell's theory of acquaintance relates to what I have called the 'ultimate sense data' and problematize that theory; and finally, I will (4) argue that the problem of 'theory-dependent' sense data is fundamental to language.

Russell's theory of definite descriptions supports the theoretical possibility of basing the data actually considered by the scientific community upon an ultimately reliable set of sense data. The primary way to refer to an entity is by name. In one of Russell's examples, where "Scott is the author of *Waverly*," 'Scott' is the name by which we refer to the object Scott, who is the theoretical entity in our example. However, the subject of a sentence may also take the form of a description, as it does in the following sentence: "the author of *Marmion* is the author of *Waverly*." We do not need the name, 'Scott' in order to refer to the object, Scott; instead, the expression, 'the author of *Marmion*' refers to Scott and may be called a *definite* description, because its form implies a single object. Similarly, 'an author of *Marmion* is an *indefinite* description because, although it will talk about one object at a time, and there may in fact only be one author of *Marmion*, its form does not limit it to one object. The power of the definite description is that it allows people who believe Scott exists to meaningfully discuss his properties and the implications of his existence with people who do not believe he exists. If we are all familiar with the book, *Marmion*, then we will be able to discuss our rival theories about its authorship using the definite description instead of

² "The Nature of Acquaintance," p. 161

the name. Practically speaking, we would still use the name as shorthand, but theoretically we could translate any controversial part of the discussion back into our common sense data through use of the definitions.

In Russell's most famous example, the definite description 'the present King of France,' refers to nothing. If 'the present King of France' were treated as an object in the sentence 'the present King of France is bald,' we could symbolize it 'Bk' (where 'B' stands for 'is bald' and the 'k' for the object). However, since there is no present king of France, it is not clear whether this is true or false, which leads Russell to analyze the theoretical entity, the king, right 'out' of any proposition 'about' the king, so that even if he does not exist the proposition can retain its meaning and be definitely true (or actually false in this case). He accomplishes this by asserting the existence of the present king of France in the symbolization: $\exists x [Kx \wedge \forall y (Ky \rightarrow x=y)]$, which can be read, 'there exists an x such that it is a present King of France and identical to anything else that is a present King of France.' To say he is bald, one only has to add 'Bx' within the scope (i.e. parentheses) of the existential qualifier: $\exists x [Kx \wedge Bx \wedge \forall y (Ky \rightarrow x=y)]$. Russell's technique guarantees that the sentence 'Bk' will always be definitely true or false regardless of whether there is a present King of France, by suggesting that it is always false when there is not.

This does not mean that all logical statements use definite description. Sentences like 'all horses are mammals' can be expressed: 'consider anything, if it is a horse, it is a mammal.' It is also possible to use sentences such as, 'there is at least one man' and 'an author of *Marmion* is an author of *Waverly*.' For example, we could still (trivially) prove that a round square must be round if we use indefinite description: 'if anything is round and square, it must be round,' but with a definite description, 'there is one and only one thing such that it is square and round, and it is round,' the whole sentence is false due to reference failure. This may seem silly, but it does allow the Coherentist to derive logical implications from a round square without first having to decide what a round square is or whether one exists.

One serious concern for the discussion of theoretical entities, which applies as much to Mathematics as it does to the natural sciences, is the concern that logical implications might be fallaciously derived from definite descriptions that ultimately refer to nonexistent entities— for example, if it turned out that the book, *Marmion* did not exist, then our definite descriptions that referred to it would not be meaningful unless we used another definite description. That is to say we simply must use names for some things, because we cannot define names upon names *ad infinitum*.

Russell originally allowed that some things are 'real' (to the extent that we can refer to them as objects) and yet non-existent, such that we would be able to coherently say

something like 'a round circle does not exist.'³ However, he found the theory of acquaintance much more plausible.

His theory of acquaintance was that, in the strictest logical interpretation of any statement, the only concepts symbolized or stated as fundamental would be the abstract concepts and what he calls sense data. He claimed that, "in the case of particulars, knowledge concerning what is known by description is ultimately reducible to knowledge concerning what is known by acquaintance."⁴ For example, a coffee mug, would have to be defined in terms of the color patches that make up our visual experience of it, as well as the other four senses, which we coordinate according to an abstract theory of its position in space. His theory of acquaintance also assumed that these ultimate sense data exist and can be consistently referenced in our comparison of different theories – indeed that is precisely their purpose.

So far, I have defined sense data by negation, as data that does not depend upon any theory for its meaning and verity; now I wish to make it clear that Russell's theory of acquaintance refers to this theoretically perfect set of sense data. The promised power of definite descriptions to bridge theories and facts solely with logical connections, would be very appealing, particularly for a Coherentist. In fact, the sheer magnitude and tediousness of the project is unlikely to daunt a Coherentist, simply because its value is primarily theoretical. She might point out that, a logical account *could* be constructed should it ever prove necessary, but it would be a Sisyphean task to actually keep the definite descriptions up-to-date with physical theories. Therefore, the theory of acquaintance is essentially the *belief in* and occasionally the search for what I have referred to as 'theory-neutral' data.

Russell's own observations suggest arguments against the idea that we can acquire useable knowledge by mere "acquaintance." For example, he points out that we are not acquainted with any other minds; we are only acquainted with the sense data from which we theorize that other bodies have minds like our own. Of course to say that we are not familiar with the experiences of any other mind is trivial based on any definition of mind. If I did share someone's exact experience, how would I distinguish it from my own, or my mind from theirs – surely not based upon our 'bodies' since that reasoning would become circular. This problem foreshadows what I will say about our ultimate dependence upon language. Therefore, it becomes important for Russell to really get down to the matter of what we can be acquainted with (and, ultimately, what we can *know* that we are acquainted with), or else, we might as well go back to relying upon the existence of the theoretical entities that we have taken for granted.

³ Hylton, Peter. "The Theory of Descriptions." Griffin, Nicholas, ed. *The Cambridge Companion to Bertrand Russell*. Cambridge: Cambridge University Press, 2003. p. 202-240

⁴ *Problems of Philosophy* p. 32

Russell says the only terms that are properly names (for things with which we are acquainted) are *I*, *this*, and *now*.⁵ These terms could give us an intuitive understanding of acquaintance in the following form: 'Now, I am acquainted with this.' It is not essential that we define 'now' since it is fundamentally the context of the thought, and, according to the Cartesian principle, 'I' is what does the thinking. However, it is not clear how we ought to understand, 'this', the supposed object or sense data of our acquaintance. Does our acquaintance include abstract concepts? Does it include memories or just those senses I am presently considering? Russell would be at least very wary, if not dismissive of the necessity of abstract concepts, because he specifically rejected the view (of idealism) that we need concepts in order to have experience.⁶ Although he does not talk about how we come to have concepts, particularly the abstract concepts, it seems their role is to help 'I,' the theoretical observer, sort the things with which it is acquainted, that is, its sense data, into definite descriptions that give it knowledge about 'physical entities' (those things that we do not perceive). Furthermore, as Russell himself points out, it is not clear whether 'this' refers to all the sense data we have ever encountered, just that which we perceive 'now,' or just that which presently occupies our 'attention.'

Thus, we have encountered the basic problem with Russell's Theory of Acquaintance, which is that it relies upon the ambiguous state of our sense data; now we will explore the problem with sense data itself, which is fundamentally one of private vs. public language.

Consider someone taking a strip of orange construction paper and weaving it through two adjacent pieces of construction paper, the left one green and the right one purple in such a way that at their border the orange strip lies behind the two pieces. This sort of thing is done to help young art students recognize that the same color *appears* different in different color-contexts. Naive students will say that the shade of orange sticking out of the green is different than the shade of orange sticking out of the purple but the instructor will pull the strip out, demonstrating that the two shades of orange are identical. To demonstrate that both ends of the strip are the same shade of orange even in the green-purple context, the teacher might have the students look through a paper towel roll at the two ends of the orange strip, without allowing them to see their respective color-contexts and (we commonly believe) that they would see that it is in fact, the same orange. Therefore, their eyes are not responsible for their observational error.

⁵ Actually, he calls them "empathetic particulars" ("The Nature of Acquaintance," p. 169) and only 'I,' and 'this,' "proper names of particulars" ("Acquaintance and Description," p. 224).

⁶"The Nature of Acquaintance."

The naive students fail to identify the two instances of 'orange' because of an over-correction in their brain, but we correct his belief based upon a broader or higher-level theory about the physical world. We are confident that the student's brain makes an error, because we see the strip revealed as one and perhaps by laying it on top of the green and purple sheet instead of threading it, we would be able to experience the illusion holistically, noting the apparent difference between the ends, but unable to locate the transition at any point along the strip.

This case contradicts Russell's belief that names (such as 'orange') do not refer to a meaning or sense, but something itself, or as he so elegantly puts it, "The meaning of 'Scott' is the denotation of 'the author of Waverly'."⁷ The denotation is meant to be something in the world, something with which we are acquainted. On the one hand, the fact that our brain interprets the world *before* we experience it, means that the 'I,' the theoretical observer must be completely outside the brain, the physical world and anything else it is capable of observing. Even if the theoretical 'I' does experience a theory-neutral set of sense data, the color-context experiment shows how risky it is to correlate the ultimate sense data with anything in the real world. Realistically, we simply separate color into two definitions, so that the shades of orange which appear distinct to the 'I' (because of the brain's overcorrection) are in fact the same on a far more theoretical definition of color, such as its wavelengths (which is, of course, mathematically defined). This is significant, because, although I can hand my mug to someone, I cannot hand him or her my brain – that is, no-one knows where the theoretical observer, the 'I,' is or how to manipulate it such that your 'I' might make observations of the data as filtered by my brain. Furthermore, one has to ask, if the brain is discerning which colors match which before displaying them to the 'I,' then how does the 'I' discern that the brain is doing this? Simply stated: our theories inform our sense data.

Of course, scientists prefer mathematical formulations to our subjectively acquired and described sense data precisely because of their ambiguity, but, as I argued in the first part of this paper, mathematical models require that we present our data in terms of theoretical entities rather than in an theory-independent form. Therefore, scientific investigation relies just as much upon our belief in the theoretical entities that we measure, as it relies upon the logical implications by which we compare theories.

The heart of the issue is whether we can expressly identify the things with which we are supposedly acquainted. In Russell's words, "The essential point is that [one] knows that the various descriptions all apply to the same entity, in spite of not being acquainted

⁷ Russell, Bertrand. "Knowledge by Acquaintance." In *Mysticism and Logic*. London: Longmans, Green & Co., 1919. p. 226

with the entity in question.”⁸ Russell’s technique requires confidence in the accuracy of our private (i.e., internal) language as it links theoretical entities to our ‘sense data’ and confidence in our public language as it links those entities to our common experience. As common sense as they may be, quite a few theories are necessary before we can even talk to each other, and therefore, practically speaking, it is a rule that precision varies inversely with ‘theory-neutrality’ – that is, unmediated and common sense descriptions of our experiences or whatever accurate sense data we may actually have, will not provide enough logical traction for the Coherentist to compare various theories, but the only way to provide this logical precision is to assume a vast amount in fundamental theories (usually of measureable entities) and undermine the Coherentist project.

Russell’s theories of definite description, and of acquaintance, are ultimately incapable of justifying Coherentism, even theoretically, because it is impossible for us to assemble and communicate our ultimate sense data without relying on some theories as fundamental to either our measurements or our discussion of them.

⁸ *Problems of Philosophy* p.30